

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims:

1. (Currently Amended) A method, comprising:

communicating digital data using an orthogonal frequency division multiplexing transmission system;

selecting a mode of operation in a transmitter among at least one mode, each mode of operation being associated with a number of active carriers for payload data transmission;

selecting a symbol interleaver in the transmitter from a set of symbol interleavers for symbol interleaving in said selected mode of operation, wherein the selection of the symbol interleaver is based on a desired depth of interleaving of M blocks of N data units per block;

applying the selected symbol interleaver in the transmitter on M blocks of N data units per block; and

mapping the interleaved data units onto the active carriers of said selected mode of operation.

2. (Original) A method according to claim 1, wherein the number of data units in the block onto which the symbol interleaving is applied differs from the number of the active carriers in said selected mode.

3. (Original) A method according to claim 2, wherein the number of data units in the block and the number of active carriers in said selected mode are integer multiples of each other.

4. (Original) A method according to claim 3, wherein the number of data units in the block and the number of active carriers in said selected mode are even integer multiples of each other.

5. (Original) A method according to claim 2, wherein the number of data units in the block is larger than the number of active carriers.

6. (Original) A method according to claim 5, wherein the number of data units in the block is two or a multiple of two times the number of active carriers.

7. (Original) A method according to claim 2, wherein the number of data units in the block is smaller than the number of active carriers.

8. (Original) A method according to claim 7, wherein the number of active carriers is two or a multiple of two times the number of data units in the block.

9. (Cancel)

10. (Original) A method according to claim 1, wherein the set of symbol interleavers comprises at least an 8K mode symbol interleaver and a 2K mode symbol interleaver

and at least a 4K mode of operation is selectable for a DVB-T (Digital Video Broadcasting-Terrestrial) system.

11. (Original) A method according to claim 1, wherein the set of symbol interleavers comprises at least an 8K mode symbol interleaver and at least a 2K mode of operation is selectable for a DVB-T system.

12. (Original) A method according to claim 1, wherein the data units are data units of one or more OFDM-symbols.

13. (Original) A method according to claim 1, wherein the digital data communication system is one of the following: a DVB-T (Digital Video Broadcasting-Terrestrial) system, an ISDB-T (Integrated Services Digital Broadcasting-Terrestrial) system.

14. (Original) A method according to claim 2, wherein the data units form part of one of the following: a broadband digital television transmission, a datacasting transmission.

15. (Currently Amended) An apparatus, comprising:
a transmitter for communicating digital data using an orthogonal frequency division multiplexing transmission system, the system having a set of modes of operation, said set comprising at least one mode of operation, each mode being associated with a predetermined number of active carriers used for transmitting payload data from the transmitter to a receiver;
a set of symbol interleavers in the transmitter, for symbol interleaving,

a mode selector in the transmitter, for selecting a mode of operation for data transmission, and

a symbol interleaver selector in the transmitter, for selecting a symbol interleaver from the set of symbol interleavers for symbol interleaving in said selected mode of operation, wherein the symbol interleaver selector is adapted to make the selection based on a desired depth of interleaving of M blocks of N data units per block.

16. (Original) A transmitter according to claim 15, wherein said set of symbol interleavers form part of an inner interleaver of the transmitter.

17. (Original) A transmitter according to claim 15, wherein the transmitter is arranged to transmit information indicative of said selected symbol interleaver to an OFDM receiver.

18. (Previously Presented) A transmitter according to claim 17, wherein one or more TPS (Transmission Parameter Signalling) bits are arranged to convey said information indicative of said selected symbol interleaver.

19. (Currently Amended) An apparatus, comprising:

a receiver for communicating digital data using an orthogonal frequency division multiplexing transmission system, the system having a set of modes of operation, said set comprising at least one mode of operation, each mode being associated with a predetermined number of active carriers used for transmitting data units from a transmitter to the receiver, the

system further having a set of symbol interleavers to be used for symbol interleaving at the transmitter;

a control block in the receiver, configured for recognizing a symbol interleaver of the set, used in the data transmission, based on information received about the used symbol interleaver, the symbol interleaver having been selected based on a desired depth of interleaving of M blocks of N data units per block;

a set of symbol de-interleavers in the receiver for de-interleaving received data units which have been interleaved at the transmitter in the symbol interleaver; and

said control block further configured for selecting a symbol de-interleaver from the set of symbol de-interleavers corresponding to the recognized symbol interleaver.

20 (Original) A receiver according to claim 19, wherein the receiver is arranged to receive information indicative of the used symbol interleaver.

21. (Previously Presented) A receiver according to claim 19, wherein an output from the control block configured for recognizing the symbol interleaver used in the data transmission, is an information indicative of the recognized symbol interleaver.

22. (Original) A receiver according to claim 19, wherein the receiver is one of the following: a fixed receiver, a mobile receiver.

23. (Original) A receiver according to claim 19, wherein the receiver comprises means for a return channel via a cellular radio network and/or via a fixed network.

24. (Currently Amended) A system, comprising:

a digital data communicating system using an orthogonal frequency division multiplexing transmitting system comprising at least one transmitter and at least one receivers, the system having a set of modes of operation, said set comprising at least one mode of operation, each mode being associated with a predetermined number of active carriers used for transmitting payload data from a transmitter to at least one receiver, the transmitter having a set of symbol interleavers to be used for symbol interleaving on blocks of data units at the transmitter, the at least one receiver having a set of symbol de-interleavers for de-interleaving the interleaved data units at the receiver;

a mode selector in the transmitter for selecting a mode of operation to be used in data transmission;

a symbol interleaver selector in the transmitter for selecting a symbol interleaver for symbol interleaving in a selected mode of operation, wherein the symbol interleaver selector is adapted to make the selection based on a desired depth of interleaving of M blocks of N data units per block;

an inner interleaver in the transmitter for applying symbol interleaving on blocks of data units;

a control block in said at least one receiver configured for recognizing the symbol interleaver used in the data transmission; and

the control block in said at least one receiver further configured for selecting a symbol de-interleaver from a set of symbol de-interleavers corresponding to the recognized symbol interleaver.

25. (Original) A system according to claim 24, wherein the ratio between the number of the active carriers in the different modes of operation is an integer number.

26. (Original) A system according to claim 24, wherein the ratio between the number of the active carriers in the different modes of operation is two or a multiple of two.

27. (Original) A system according to claim 24, wherein the number of symbol interleavers in the set of symbol interleavers is smaller than the number of the modes of operation of the system.

28. (Currently Amended) A method, comprising:

communicating digital data using an orthogonal frequency division multiplexing transmission system including at least one transmitter and at least one receivers;

receiving, in the at least one receiver, interleaved data units ~~in a receiver and~~ information of a symbol interleaver used for symbol interleaving at said at least one transmitter;

recognizing in the at least one receiver, based on said received information of the used symbol interleaver, a symbol interleaver used in the data transmission, the symbol interleaver having been selected based on a desired depth of interleaving of M blocks of N data units per block;

selecting a de-interleaver in the at least one receiver to correspond to the recognized symbol interleaver, and

de-interleaving in the at least one receiver the received data units using the selected de-interleaver.